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Mountain precipitation varied from above average in northwest Montana to well below average in the central and south central areas. Snowpack is above average along the northern part and below average in the southwest corner. The majority of the state has near to a little below average snowpack. Most reservoirs have near to above average storage except those in southwest Montana. West of the Divide, most streams are forecast to have near to a little above average streamflows. East of the Divide, forecasts range from well below average runoff in the Red Rock-Beaverhead Drainages to well above average from areas west of Great Falls. Surface Water Supply Indexes (SWSI) vary from +3.1 or +3.2 in the Sun and Marias River Drainages to -2.9 in the Beaverhead River Drainage.

SNOWPACK

Although warm temperatures depleted much of the snow in the valley and lower foothill areas, February brought little change to Montana's mountain snowpack conditions. Snowpacks remain below to well below average in extreme southwest Montana while near to above average snowpacks remain in the central and north central parts of the state. West of the Divide, snowpacks range from a low of about 85 percent of average on the Flint Creek and Upper Clark Fork drainages to about 115 percent of average on the Middle and North Forks of the Flathead River. Most other areas report near normal snowpacks. East of the Divide, below to well below average snowpacks continue to persist in the Big Hole, Jefferson and Madison River Basins where snowpacks range from 75 percent of average in the Beaverhead River Basin to about 85 percent of average in the Boulder River Basin. Areas in the Red Rock River Basin report snowpacks as low as 50 to 60 percent of average. The Bridger and Crazy Mountains have snowpacks about 80 percent of normal. Elsewhere, snowpack conditions are near to above average. These range from about 95 percent of average in the Upper Yellowstone River Basin to about 120 percent of average in the headwaters of the Marias River. Snowpacks in the northern Wyoming mountain ranges, feeding the Bighorn, Little Bighorn, Tongue and Powder Rivers, are also near to above average.

PRECIPITATION

Mountain precipitation during February varied from above average in the northwest corner to well below average in the southern and central areas. West of the Divide, mountain precipitation was 110 to 125 percent of average in the Kootenai and Lower Clark Fork drainages and about 75 percent of average in the Upper Clark Fork Drainage. East of the Divide, monthly mountain precipitation was well above average in the St. Mary-Milk Drainage, near average in the Sun-Teton-Marias Drainage, 65 to 75 percent of average in the Jefferson, Madison, Missouri Main Stem, Upper and Lower Yellowstone drainages and about 55 to 60 percent of average in the Smith-Judith-Musselshell and Gallatin River Drainages.

RESERVOIRS

Most irrigation reservoirs have near to above average storage except for Lima, Clark Canyon, Smith, Bair and Deadman's Basin. Storage in Canyon Ferry and Flathead Lake is a little below average while Fort Peck has well below average storage. Most other larger multipurpose reservoirs have near to above average storage for this time of the year.

STREAMFLOW

Spring and summer streamflow is forecast to be near to above average on most west side drainages. Upper Clark Fork River tributaries and the southern parts of the Bitterroot River Drainage are expected to produce below average runoff. East of the Divide, well below average flows are forecast for the Red Rock-Beaverhead River Drainages. Above average runoff is predicted for some tributaries to the Marias River, Sun River and some streams originating in the Bighorn Mountains in Wyoming. All other areas should have near average runoff.

SOIL MOISTURE

Soil moisture under the snowpack is generally near to a little above average in the northern part of the state, near to a little below average in central and southcentral drainages and below average in the southwest areas. Some low elevation melt increased soil moisture in the foothill areas.

SURFACE WATER SUPPLY INDEX

The Soil Conservation Service has implemented a program to calculate a Surface Water Supply Index (SWSI) for various basins in Montana. SWSI is a measure of available surface water supplies during spring and summer months. The index ranges from -4.0 to +4.0. A SWSI of -4.0 represents an extremely dry situation, 0 is a near normal situation and +4.0 represents an extremely wet situation. The SWSI provides a scale to evaluate various levels of dryness or wetness and provides a means to compare or evaluate conditions across the state. SWSI considers snowpack, mountain precipitation, soil moisture and reservoir storage.

SWSI SCALE

SWSI	DESIGNATION
+3.0 to +4.0	Extremely wet
+2.0 to +3.0	Moderately wet
+1.0 to +2.0	Slightly wet
-1.0 to +1.0	Near average
-1.0 to -2.0	Slightly dry
-2.0 to -3.0	Moderately dry
-3.0 to -4.0	Extremely dry

Currently, SWSI has been developed for the following drainages. This list will expand as SWSI's for other basins are developed.

SWSI as of March 1, 1990

SWSI	BASIN
-0.8	Clark Fork River above Blackfoot River
+0.4	Blackfoot River
-0.1	Clark Fork River above Missoula
-0.6	Bitterroot River
-0.2	Clark Fork River below Bitterroot River
-2.9	Beaverhead River
-1.9	Ruby River
-1.9	Big Hole River
-0.1	Boulder River (Jefferson)
-2.0	Jefferson River
-0.9	Madison River
-0.8	Gallatin River
-1.4	Missouri River above Canyon Ferry
+1.4	Smith River
+3.1	Sun River
+3.2	Marias River
0.0	Musselshell River
+2.6	Milk River
-0.3	Yellowstone River above Livingston
-0.8	Shields River
+0.2	Boulder River (Yellowstone)
+0.5	Stillwater River (Yellowstone)
-0.1	Clarks Fork River
0.0	Rock-Red Lodge Creek
-0.1	Yellowstone River above Bighorn River
+1.9	Little Bighorn River

+2.0 Tongue River

KOOTENAI RIVER BASIN in Montana

February mountain precipitation was about 125 percent of average. The snowpack is about 110 percent of average for the drainage but varies from well above average in British Columbia to near average in the southern areas. Soils under the snowpack range from near average to a little wetter than normal. Runoff is forecast to be near to a little above average on tributaries to the Kootenai and a little above average on the Kootenai River.

STREAMFLOW FORECASTS

FORECAST POINT	FCST PERIOD	<---DRIER--- FUTURE --WETTER---> CHANCE OF EXCEEDING * 90% (KAF)	70% (KAF)	50% (KAF)	50% %AVG	30% (KAF)	10% (KAF)	25YR (KAF)
KOOTENAI bl Libby Dam (1,2)	APR-JUL	5590	6340	6810	116	7280	8000	5885
	APR-SEP	6560	7440	7990	116	8540	9390	6903
FISHER nr Libby	APR-JUL	188	225	250	104	275	310	240
	APR-SEP	199	240	265	104	290	330	256
YAAK nr Troy	APR-JUL	415	490	540	109	590	670	494
	APR-SEP	425	505	560	108	615	695	517
KOOTENAI at Leonia (1,2)	APR-JUL	6900	7800	8390	114	8980	9910	7340
	APR-SEP	7930	8970	9650	114	10300	11400	8441

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

RESERVOIR STORAGE (1000AF)

RESERVOIR	USABLE CAPACITY	** USABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
LAKE KOOCANUSA	5748.0	1947.0	1390.0	1998.0

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
EAST KOOTENAI in B.C.	28	128	122
KOOTENAI MAINTSTEM in MT	30	133	108
TOBACCO	5	128	111
FISHER	6	129	99
YAAK	10	131	106
KOOTENAI in MT	37	133	107
KOOTENAI ab Bonners Ferry	65	131	112

FLATHEAD RIVER BASIN

Snowpacks vary from above average on the Middle and North Forks of the Flathead River to a little below average on the Little Bitterroot and Jocko River headwaters. During February, mountain precipitation was near average for the Flathead Basin. Soils under the snowpack are wetter than normal. Spring and summer streamflows are expected to be near to a little above average on most streams with the highest percentages in the North and Middle Fork Drainages.

STREAMFLOW FORECASTS

FORECAST POINT	FCST PERIOD	<---DRIER--- FUTURE --WETTER---> CHANCE OF EXCEEDING * 90% (KAF)	70% (KAF)	50% (KAF)	50% %AVG	30% (KAF)	10% (KAF)	25YR (KAF)
NF FLATHEAD nr Columbia Falls	APR-JUL	1650	1810	1920	113	2030	2190	1701
	APR-SEP	1800	1980	2100	112	2220	2400	1880
MF FLATHEAD nr West Glacier	APR-JUL	1590	1750	1860	111	1970	2130	1680
	APR-SEP	1730	1900	2020	110	2140	2310	1836
SF FLATHEAD nr Columbia Fls (1,2)	APR-JUL	1760	2100	2260	107	2420	2760	2110
	APR-SEP	1870	2180	2380	106	1870	2900	2248
FLATHEAD at Columbia Falls (2)	APR-JUL	5300	5840	6200	110	6560	7100	5621
	APR-SEP	5680	6260	6660	109	7060	7640	6114
SWAN nr Bigfork	APR-JUL	520	575	615	103	655	710	597
	APR-SEP	580	645	690	101	735	800	683
FLATHEAD nr Polson (1,2)	APR-JUL	5850	6780	7200	109	7620	8550	6586
	APR-SEP	6230	7240	7700	108	8160	9170	7150

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

RESERVOIR STORAGE (1000AF)

RESERVOIR	USABLE CAPACITY	** USABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
CAMAS (4)	45.2	21.0	6.2	21.7
MISSION VALLEY (8)	100.0	48.5	21.8	38.4
HUNGRY HORSE	3451.0	2456.0	1296.0	2257.0
FLATHEAD LAKE	1791.0	792.2	774.0	901.0

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
NORTH FORK FLATHEAD	16	129	116
MIDDLE FORK FLATHEAD	11	138	116
SOUTH FORK FLATHEAD	12	110	99
STILLWATER-WHITEFISH	9	111	97
SWAN	12	104	101
MISSION VALLEY	5	110	105
LITTLE BITTERROOT-ASHLEY	10	101	88
JOCKO	5	91	90
FLATHEAD	55	117	107

UPPER CLARK FORK RIVER BASIN

Mountain precipitation was about 75 percent of average during February. Snowpacks are 10 to 15 percent below average in most areas with the higher percentages being in the Blackfoot Drainage. Moisture in the soils under the snowpack is a little below average. Streamflows are expected to be below average on the upper tributaries to the Clark Fork River. Streams in the northern part of the basin are forecast to have a little higher percentage runoff. The Surface Water Supply Index (SWSI) is -0.8 for the Clark Fork Basin above the Blackfoot River, +0.4 for the Blackfoot River and -0.1 for the Clark Fork River above Missoula.

STREAMFLOW FORECASTS

FORECAST POINT	FCST PERIOD	90% (KAF)	70% (KAF)	50% (KAF)	50% %AVG	30% (KAF)	10% (KAF)	25YR (KAF)
		<---DRIER---		FUTURE			--WETTER--->	
		-----		CHANCE OF EXCEEDING *			-----	
MOULTON RES inflow (million gal.)	APR-JUN	104	155	189	81	225	275	233
	APR-JUL	110	167	205	80	245	300	257
WARM SPRINGS CK nr Anaconda (2)	APR-JUL	20	26	30	77	34	40	39
	APR-SEP	25	33	38	78	43	51	49
FLINT CK nr Southern Cross (2)	APR-JUL	5.7	8.9	11.0	74	13.1	16.3	14.8
	APR-SEP	6.6	10.4	13.0	73	15.6	19.4	17.8
FLINT CK bl Boulder Ck	APR-JUL	24	37	46	75	55	68	61
	APR-SEP	30	47	58	74	69	86	78
LOWER WILLOW CK RES inflow	APR-JUL	6.5	9.6	11.8	79	14.0	17.1	14.9
	APR-SEP	7.0	10.3	12.6	80	14.9	18.2	15.8
MF ROCK CK nr Philipsburg	APR-JUL	43	54	61	88	68	79	69
	APR-SEP	48	60	68	88	76	88	77
NEVADA CK nr Finn	APR-JUL	10.0	14.0	17.0	82	20	25	21
	APR-SEP	10.0	15.0	18.0	82	21	26	22
BLACKFOOT nr Bonner	APR-JUL	630	715	770	88	825	910	874
	APR-SEP	695	790	850	88	910	1000	969
CLARK FORK ab Milltown	APR-JUL	375	510	600	85	690	825	703
	APR-SEP	430	585	690	85	795	950	812
CLARK FORK ab Missoula	APR-JUL	965	1210	1370	87	1530	1780	1577
	APR-SEP	1090	1360	1550	87	1740	2010	1781

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

STREAMFLOW FORECASTS

FORECAST POINT	PCST	90%	70%	50%	30%	10%	2SYR FORECAST	2SYR AVG	2SYR AVG	2SYR AVG
MOULTON RES Inflow (million gal.)	APR-JUN	10m	12M	18M	8I	2B	2M	2M	2M	2M
	APR-JUL	11M	18M	20M	9D	2M	3M	3M	3M	3M
GREEN CREEKS CK at Aspenosa (2)	APR-JUL	2M	3B	3D	2T	3A	4D	3I	3I	3I
	APR-SEP	2B	3J	3B	2B	4J	3I	3I	3I	3I
PLEAS CK at Bourbon Cross (2)	APR-JUL	3.1	4.9	11.0	7A	13.1	16.1	14.8	14.8	14.8
	APR-SEP	4.8	10.4	15.0	7J	13.6	18.4	17.9	17.9	17.9
FLORC CK bl Boulder CK	APR-JUL	2A	3J	4A	2J	3D	4A	6I	6I	6I
	APR-SEP	3D	6J	5B	2A	6J	8S	7B	7B	7B
LOWER WILLOW CK bbl Inflow	APR-JUL	8.1	9.6	11.8	7B	14.0	17.1	16.9	16.9	16.9
	APR-SEP	7.0	10.3	12.6	8D	15.9	18.1	15.4	15.4	15.4
MT DOZE CA at Whitingberg	APR-JUL	A3	5A	A5	3J	6B	7I	6E	6E	6E
	APR-SEP	4E	6D	5B	3B	7B	9E	7F	7F	7F
DEVADO CK at Flint	APR-JUL	10.0	14.0	17.0	8J	20	25	23	23	23
	APR-SEP	10.0	15.0	18.0	8J	21	26	24	24	24
BLACKTOOT at Bonnes	APR-JUL	530	715	870	84	1025	1210	1074	1074	1074
	APR-SEP	605	790	952	89	1115	1300	1159	1159	1159
PLEAS CREEK-ab Millican	APR-JUL	215	310	400	81	490	585	753	753	753
	APR-SEP	430	580	690	83	795	950	812	812	812
PLEAS CRK at Stevenvl	APR-JUL	915	1210	1500	82	1790	2085	1771	1771	1771
	APR-SEP	1070	1340	1610	81	1880	2150	1781	1781	1781

A The, 10s, and 90s chances of exceeding are the probabilities that the actual flow will exceed the volumes in this table.

The average is computed for the 1911-1967 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 9% and 91% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

RESERVOIR STORAGE (1000AF)

RESERVOIR	USABLE CAPACITY	** USABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
GEORGETOWN LAKE	31.0	24.6	25.4	25.7
LOWER WILLOW CREEK	4.9	3.8	0.8	1.7
NEVADA CREEK	12.6	7.0	1.2	5.2

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
CLARK FORK ab FLINT CREEK	27	99	83
FLINT CREEK	14	97	84
ROCK CREEK	4	108	88
CLARK FORK ab BLACKFOOT	43	99	83
BLACKFOOT	22	93	89
UPPER CLARK FORK	61	96	85

BITTERROOT RIVER BASIN

Snowpack in the headwaters of the East and West Forks and along the east side is about 15 percent below average and almost average in the more rugged part of the Bitterroot Range. February mountain precipitation was near average for the basin. Soil moisture under the snowpack is a little below average. Spring and summer runoff is forecast to be below average from the East and West Forks and from the east side streams but near average from the west side streams. The Surface Water Supply Index (SWSI) is -0.6 for the Bitterroot River Basin.

STREAMFLOW FORECASTS

FORECAST POINT	FCST PERIOD	90% (KAF)	70% (KAF)	50% (KAF)	50% %AVG	30% (KAF)	10% (KAF)	25YR (KAF)
		<---DRIER---		FUTURE		--WETTER--->		
		-----		CHANCE OF EXCEEDING *		-----		
WF BITTERROOT nr Conner (2)	APR-JUL	88	111	126	86	141	164	147
	APR-SEP	99	125	143	85	161	187	169
BITTERROOT nr Darby	APR-JUL	335	415	470	90	525	605	524
	APR-SEP	365	455	515	90	575	665	573
ROCK CK nr Darby (2)	APR-JUL	63	72	78	98	84	93	80
	APR-SEP	68	77	83	99	89	98	84
SKALKAHO CK nr Hamilton	APR-JUL	36	40	43	90	46	50	48
	APR-SEP	42	48	51	91	55	60	56
BURNT FORK CK nr Stevensville (2)	APR-JUL	18.0	23	26	87	29	34	30
	APR-SEP	21	27	31	86	35	41	36
BITTERROOT at Missoula	APR-JUL	885	1100	1240	90	1380	1590	1371
	APR-SEP	965	1190	1350	90	1510	1740	1497

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

RESERVOIR STORAGE (1000AF)

RESERVOIR	USABLE CAPACITY	** USABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
PAINTED ROCKS LAKE	31.7	0.0	0.0	14.7
COMO	34.9	15.4	11.1	13.4

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
WEST FORK BITTERROOT	9	90	85
EAST SIDE BITTERROOT	6	111	86
WEST SIDE BITTERROOT	9	112	95
BITTERROOT	24	104	90

LOWER CLARK FORK RIVER BASIN

Mountain precipitation was about 110 percent of average for February. Snowpack is now only slightly below average. Soils under the snowpack are a little drier than usual. Runoff is forecast to be a little below average on the Clark Fork and near to a little above average on streams flowing into the Clark Fork River. The Surface Water Supply Index (SWSI) is -0.2 for the Clark Fork River below the Bitterroot River.

STREAMFLOW FORECASTS

FORECAST POINT	FCST PERIOD	<---DRIER--- FUTURE --WETTER---> CHANCE OF EXCEEDING * 90% (KAF)	70% (KAF)	50% (KAF)	50% %AVG	30% (KAF)	10% (KAF)	25YR (KAF)
CLARK FORK ab Missoula	APR-JUL	965	1210	1370	87	1530	1780	1577
	APR-SEP	1090	1360	1550	87	1740	2010	1781
CLARK FORK bl Missoula	APR-JUL	1800	2400	2610	89	2820	3420	2948
	APR-SEP	2000	2650	2890	88	3130	3800	3276
CLARK FORK at St. Regis (1)	APR-JUL	2180	2950	3430	88	3910	4670	3894
	APR-SEP	2420	3270	3810	88	4350	5190	4325
CLARK FORK nr Plains (1,2)	APR-JUL	8250	9740	10700	99	11700	13200	10850
	APR-SEP	9070	10700	11800	99	12900	14600	11930
THOMPSON nr Thompson Falls	APR-JUL	177	210	230	104	250	285	222
	APR-SEP	200	235	260	104	285	320	250
PROSPECT CK at Thompson Falls	APR-JUL	100	120	133	104	146	166	128
	APR-SEP	107	128	142	104	156	177	137
CLARK FORK at Whitehorse Rpds (1,	APR-JUL	8630	10400	11500	95	12600	14300	12150
	APR-SEP	9490	11500	12700	95	13900	15800	13370

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

RESERVOIR STORAGE (1000AF)

RESERVOIR	USABLE CAPACITY	** USABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
NOXON RAPIDS	335.0	274.0	260.5	297.6

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
UPPER CLARK FORK	61	96	85
BITTERROOT	24	104	90
LOWER CLARK FORK	25	117	97
CLARK FORK TOTAL	103	106	91
FLATHEAD	43	120	110
PEND OREILLE	151	112	98

JEFFERSON RIVER BASIN

February mountain precipitation was about 75 percent of average for the basin. Snowpack is presently 20 to 25 percent below average in the southern drainages and 15 to 20 percent below average in the northern watersheds. Some areas in the Red Rock River Headwaters have only 50 to 60 percent of average snowpack. Soils under the snowpack are drier than normal. Streamflows are forecast to be well below average on the Red Rock and Beaverhead Rivers up to a little below average on the Boulder River. Reservoir storage in Lima and Clark Canyon remain well below average. The Surface Water Supply Index (SWSI) is -2.9 for the Beaverhead, -1.9 for the Big Hole, -0.1 for the Boulder and -2.0 for the Jefferson River basins.

STREAMFLOW FORECASTS

FORECAST POINT	FCST PERIOD	<---DRIER--- FUTURE --WETTER---> CHANCE OF EXCEEDING * 90% (KAF)	70% (KAF)	50% (KAF)	50% %AVG	30% (KAF)	10% (KAF)	25YR (KAF)
RED ROCK RIVER near Monida (2)	APR-JUL	30	52	67	64	82	104	105
	APR-SEP	31	56	73	64	90	115	114
BEAVERHEAD RIVER near Grant (2)	APR-JUL	12.0	63	97	65	131	182	149
	APR-SEP	11.0	73	114	66	156	215	174
BEAVERHEAD RIVER at Barratts (2)	APR-JUL	41	97	135	70	173	230	192
	APR-SEP	48	115	160	71	205	270	224
RUBY RIVER near Alder	APR-JUL	45	60	71	80	82	97	89
	APR-SEP	54	72	85	80	98	116	106
BIG HOLE RIVER near Melrose	APR-JUL	330	445	520	75	595	710	696
	APR-SEP	355	480	565	75	650	775	757
BOULDER RIVER near Boulder	APR-JUL	44	69	86	95	103	128	91
	APR-SEP	47	74	92	95	110	137	97
WILLOW CREEK near Harrison	APR-JUL	7.5	12.6	16.0	86	19.4	25	18.7
	APR-SEP	9.0	14.0	18.0	86	22	27	21
JEFFERSON RIVER near Three Forks	APR-JUL	350	590	750	72	910	1150	1042
	APR-SEP	405	655	825	71	995	1250	1156

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

RESERVOIR STORAGE (1000AF)

RESERVOIR	USABLE CAPACITY	** USABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
LIMA	84.0	19.7	11.0	37.5
CLARK CANYON	255.6	89.9	107.0	146.1
RUBY RIVER	38.8	24.6	24.8	27.2

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
BEAVERHEAD	36	73	74
RUBY	15	84	76
BIGHOLE	28	92	80
BOULDER	15	99	86
JEFFERSON	76	82	78

MADISON RIVER BASIN

Mountain precipitation was about 75 percent of average for February. Snowpack is a little below average in the drainages above Hebgen Lake and about 15 percent below average in the lower watersheds. Soils under the snowpack are a little drier than normal. Spring and summer streamflows are forecast to be 10 to 15 percent below average. The Surface Water Supply Index (SWSI) is -0.9 for the Madison River Basin.

STREAMFLOW FORECASTS

FORECAST POINT	FCST PERIOD	90% (KAF)	70% (KAF)	50% (KAF)	50% %AVG	30% (KAF)	10% (KAF)	25YR (KAF)
		<---DRIER---		FUTURE		--WETTER--->		
		-----		CHANCE OF EXCEEDING *		-----		
MADISON RIVER near Grayling (2)	APR-JUL	290	320	340	87	360	390	390
	APR-SEP	375	415	440	88	465	505	499
MADISON RIVER near McAllister (2)	APR-JUL	500	560	600	88	640	700	680
	APR-SEP	630	705	755	88	805	880	856

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

RESERVOIR STORAGE (1000AF)

RESERVOIR	USABLE CAPACITY	** USABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
ENNIS LAKE	41.0	29.9	30.8	34.8
HEBGEN LAKE	377.5	255.3	263.2	235.3

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
MADISON above HEBGEN	16	82	89
LOWER MADISON	22	97	86
MADISON	37	90	87

GALLATIN RIVER BASIN

Snowpacks are a little below average in the Upper Gallatin and below average in the headwaters of the East Gallatin tributaries. During February, mountain precipitation was only about one-half of average. Soils under the snowpack are drier than usual. Streamflows are forecast to be a little below average in the Upper Gallatin drainages and below average on Hyalite Creek and the East Gallatin River. The Surface Water Supply Index (SWSI) is -0.8 for the Gallatin River Basin.

STREAMFLOW FORECASTS

FORECAST POINT	FCST PERIOD	<---DRIER--- FUTURE --WETTER---> CHANCE OF EXCEEDING * 90% (KAF)	70% (KAF)	50% (KAF)	50% %AVG	30% (KAF)	10% (KAF)	25YR (KAF)
GALLATIN RIVER near Gateway	APR-JUL	375	420	450	98	480	525	460
	APR-SEP	450	500	530	98	565	610	540
E & W FK. HYALITE CR. nr Bozeman	APR-JUL	15.0	19.0	22	92	25	29	24
	APR-SEP	17.0	22	25	89	28	33	28
HYALITE CREEK near Bozeman (2)	APR-JUL	25	30	33	87	36	41	38
	APR-SEP	30	35	38	86	41	46	44
GALLATIN RIVER at Logan	APR-JUL	370	455	510	97	565	650	528
	APR-SEP	455	540	600	97	660	745	616

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

RESERVOIR STORAGE (1000AF)

RESERVOIR	USABLE CAPACITY	** USABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
MIDDLE CREEK	8.0	4.5	4.0	3.6

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
UPPER GALLATIN	15	116	91
EAST GALLATIN	13	106	82
GALLATIN	25	109	87

MAINSTEM MISSOURI RIVER BASIN

Mountain precipitation during February was about three-quarters of average. Snowpacks on the headwaters of smaller drainages that flow into the Missouri River are a little below average. However, snow on the Missouri River headwater streams is below average. Runoff is forecast to be about 80 percent of average from the headwater streams and a little below average on smaller streams flowing into the Missouri River. The Surface Water Supply Index (SWSI) is -1.4 for the Missouri River above Canyon Ferry Reservoir.

STREAMFLOW FORECASTS

FORECAST POINT	FCST PERIOD	90% (KAF)	70% (KAF)	50% (KAF)	50% %AVG	30% (KAF)	10% (KAF)	25YR (KAF)
		<---DRIER---	FUTURE	--WETTER--->				
		-----	CHANCE OF EXCEEDING *	-----				
MISSOURI RIVER at Toston (2)	APR-JUL	1260	1620	1850	82	2070	2430	2250
	APR-SEP	1480	1890	2150	83	2410	2820	2590
PRICKLY PEAR CREEK nr Clancy	APR-JUL	8.0	18.0	25	96	32	42	26
	APR-SEP	10.0	21	29	94	37	48	31
SUN RIVER at Gibson Dam (2)	APR-JUL	415	500	555	112	610	695	494
	APR-SEP	465	550	610	113	670	755	542
MISSOURI RIVER at Fort Benton (2)	APR-JUL	1940	2600	3020	87	3440	4090	3470
	APR-SEP	2230	2990	3460	87	3950	4710	3990
MARIAS RIVER near Shelby (2)	APR-JUL	380	470	525	110	645	820	478
	APR-SEP	400	490	550	110	675	860	501
MISSOURI RIVER at Virgelle (2)	APR-JUL	2300	3090	3600	91	4200	5070	3960
	APR-SEP	2610	3510	4090	91	4770	5760	4500
MISSOURI RIVER near Landusky (2)	APR-JUL	2540	3400	4010	93	4700	5690	4310
	APR-SEP	2890	3870	4540	93	5340	6470	4900
MISSOURI RIVER below Fort Peck (2)	APR-JUL	2390	3320	3960	93	4640	5710	4260
	APR-SEP	2690	3740	4460	93	5230	6430	4800
LAKE SAKAKAWEA Inflow (2)	APR-JUL	7150	9350	10800	98	12200	14400	11000
	APR-SEP	7930	10400	11900	98	13500	16000	12200

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

RESERVOIR STORAGE (1000AF)

RESERVOIR	USABLE CAPACITY	** USABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
CANYON FERRY LAKE	2043.0	1410.0	1267.0	1563.0
HELENA VALLEY	9.2	3.2	4.6	4.7
LAKE HELENA	10.4	11.1	10.7	10.1
HAUSER & HELENA	61.9	63.6	62.4	60.7
HOLTER LAKE	81.9	65.3	78.3	66.6
FORT PECK LAKE (MAF)	18.9	10.9	12.1	14.9

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
MISSOURI HEADWATERS	121	88	82
WEST SIDE MISSOURI	12	107	94
SMITH-BELT	11	113	95
MAINSTEM MISSOURI	23	110	94
SUN-TETON-MARIAS	18	128	115
JUDITH-MUSSELSHELL	17	126	103
MISSOURI above FORT PECK	164	96	88
MILK RIVER	11	135	110
MISSOURI in MONTANA	173	97	89
MISSOURI blw YELLOWSTONE	279	104	91

SMITH-JUDITH-MUSSELSHELL RIVER BASINS

Snowpacks are a little below average in the headwaters of the Smith River and Belt Creek and a little above average in the Judith and Musselshell River Headwaters. February mountain precipitation was about 60 percent of average. Soils under the snowpack are a little drier than normal. Streamflows are forecast to be near to a little above average. Storage is still below average for the Smith, Bair and Deadman's Basin Reservoirs. The Surface Water Supply Index (SWSI) is +1.4 for the Smith River and 0.0 for the Musselshell River Basin.

STREAMFLOW FORECASTS

FORECAST POINT	FCST PERIOD	<---DRIER--- FUTURE --WETTER---> CHANCE OF EXCEEDING * 90% (KAF)	70% (KAF)	50% (KAF)	50% %AVG	30% (KAF)	10% (KAF)	25YR (KAF)
SMITH RIVER nr Ft. Logan	APR-JUL	37	59	74	109	89	111	68
	APR-SEP	48	71	87	109	103	126	80
SHEEP CREEK nr White Sulphur Sprg	APR-JUL	17.7	19.7	21	112	22	24	18.8
	APR-SEP	21	23	24	109	25	27	22
N.F. MUSSELSHELL near Delphine	APR-JUL	4.3	5.1	5.6	100	6.1	6.9	5.6
	APR-SEP	4.8	5.7	6.4	100	7.1	8.0	6.4
S.F. MUSSELSHELL above Martinsdale	APR-JUL	28	46	59	104	72	90	57
	APR-SEP	31	50	63	103	76	95	61

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

RESERVOIR STORAGE (1000AF)

RESERVOIR	USABLE CAPACITY	** USABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
SMITH RIVER	10.6	3.6	1.5	7.2
NEWLAN CREEK	12.4	8.9	7.0	8.8
BAIR	7.0	2.8	0.6	4.5
MARTINSDALE	23.1	11.0	0.2	10.0
DEADMAN'S BASIN	72.2	32.8	15.4	48.3

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
SMITH-BELT	11	113	95
JUDITH-MUSSELSHELL	17	126	103

SUN-TETON-MARIAS RIVER BASINS

Mountain precipitation was near average in February. Snowpack is a little above average in the headwaters of the Sun and Teton Rivers and well above average in the Marias River headwaters. Soils under the snow are a little wetter than normal. Most reservoirs report well above average storage. Streamflows are forecast to be near to above average on all drainages. The Surface Water Supply Index (SWSI) is +3.1 for the Sun River and +3.2 for the Marias River Basin.

STREAMFLOW FORECASTS

FORECAST POINT	FCST PERIOD	<---DRIER--- FUTURE --WETTER---> CHANCE OF EXCEEDING * 90% (KAF)	70% (KAF)	50% (KAF)	50% %AVG	30% (KAF)	10% (KAF)	25YR (KAF)
SUN RIVER at Gibson Dam (2)	APR-JUL	415	500	555	112	610	695	494
	APR-SEP	465	550	610	113	670	755	542
TWO MEDICINE CREEK near Browning	APR-JUL	162	210	240	108	270	320	222
	APR-SEP	178	225	255	109	285	330	235
BADGER CREEK near Browning (2)	APR-JUL	81	104	119	111	135	157	107
	APR-SEP	96	120	137	111	154	178	123
SWIFT RESERVOIR INFLOW nr Dupuyer	APR-JUL	46	66	79	113	92	112	70
	APR-SEP	58	78	92	112	106	126	82
DUPUYER CREEK near Valier	APR-JUL	2.8	13.6	21	124	28	39	16.9
	APR-SEP	3.9	15.3	23	123	31	42	18.7
CUT BANK CREEK at Cut Bank	APR-JUL	71	85	95	103	105	119	92
	APR-SEP	84	96	105	105	114	127	100
MARIAS RIVER near Shelby (2)	APR-JUL	380	470	525	110	645	820	478
	APR-SEP	400	490	550	110	675	860	501

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

RESERVOIR STORAGE (1000AF)

RESERVOIR	USABLE CAPACITY	** USABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
GIBSON	99.1	59.6	30.2	46.4
PISHKUN	32.0	18.5	19.4	18.1
WILLOW CREEK	32.2	30.6	23.1	20.3
LOWER TWO MEDICINE LAKE	11.9	12.0	11.9	8.0
FOUR HORNS LAKE	19.2	13.2	14.0	12.3
SWIFT	30.0	19.5	13.0	14.9
LAKE FRANCES	112.0	92.0	41.8	68.5
LAKE ELWELL (TIBER)	1347.0	750.1	641.7	555.2

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
SUN-TETON	12	119	108
MARIAS	7	137	121
SUN-TETON-MARIAS	18	128	115

ST. MARY and MILK RIVER BASINS

Snowpack in the Bear Paw Mountains is near average while the Milk and St. Mary River Headwaters show above average levels. February mountain precipitation was about 120 percent of average. Moisture levels are above average for soils under the snowpack. Streamflows are predicted to be a little above average on both the St. Mary and Milk River Drainages. Reservoir storage is above average. The Surface Water Supply Index (SWSI) is +2.6 for the irrigators having USBR project water.

STREAMFLOW FORECASTS

FORECAST POINT	FCST PERIOD	<---DRIER--- FUTURE --WETTER---> CHANCE OF EXCEEDING * 90% (KAF)	70% (KAF)	50% (KAF)	50% %AVG	30% (KAF)	10% (KAF)	25YR (KAF)
SWIFTCURRENT CREEK at Sherburne (	APR-JUL	100	110	117	106	124	134	110
	APR-SEP	122	131	137	107	143	152	128
ST. MARY RIVER near Babb (2)	APR-JUL	375	410	430	106	450	485	404
	APR-SEP	450	485	505	107	525	560	474
MILK RIVER at Eastern Crossing	MAR-SEP	88	100	108	111	135	176	97
MILK RIVER at Eastern Crossing (2)	MAR-SEP	270	280	285	106	290	340	270

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

RESERVOIR STORAGE (1000AF)

RESERVOIR	USABLE CAPACITY	** USABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
LAKE SHERBURNE	64.3	36.9	30.0	24.1
FRESNO	127.0	86.3	4.6	51.5
BEAVER CREEK	3.5	3.0	0.6	2.0
NELSON	66.8	36.0	3.0	36.0

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
MILK HEADWATERS	4	139	114
BEAR PAW	7	126	98
MILK RIVER	11	135	110
ST. MARY	7	137	114
ST. MARY and MILK	13	137	112
BOW RIVER in ALBERTA	21	132	143
OLDMAN RIVER in ALBERTA	9	132	145

UPPER YELLOWSTONE RIVER BASIN

Mountain precipitation was about two-thirds average in February. Presently, the snowpacks are a little below average in the upper reaches of the Yellowstone River Headwaters and in the headwaters of the Clarks Fork River and Rock Creek. The Boulder and Stillwater Drainages have above average snow while the Crazy Mountains have below average amounts. Soils under the snow are drier than usual. Spring and summer streamflows are forecast to be a little below average in the upper basin and near average for downstream tributaries. The Surface Water Supply Index (SWSI) is -0.3 for the Yellowstone River above Livingston, -0.8 for the Shields River, +0.2 for the Boulder River, +0.5 for the Stillwater River, -0.1 for the Clarks Fork River and 0.0 for the Rock-Red Lodge Creek, and -0.1 for the Yellowstone above the Bighorn River.

STREAMFLOW FORECASTS

FORECAST POINT	FCST PERIOD	90% (KAF)	70% (KAF)	50% (KAF)	50% %AVG	30% (KAF)	10% (KAF)	25YR (KAF)
		<---DRIER---	FUTURE	CHANCE OF EXCEEDING *			---WETTER--->	
YELLOWSTONE at Lake Outlet	APR-JUL	405	475	520	88	570	635	590
	APR-SEP	565	660	720	88	780	875	818
YELLOWSTONE at Corwin Springs	APR-JUL	1240	1410	1530	93	1650	1820	1650
	APR-SEP	1510	1710	1850	93	1990	2190	2000
YELLOWSTONE at Livingston	APR-JUL	1470	1660	1790	93	1920	2110	1920
	APR-SEP	1810	2030	2180	94	2330	2550	2330
SHIELDS RIVER near Livingston	APR-JUL	94	139	170	101	200	245	168
	APR-SEP	110	157	189	101	220	270	187
BOULDER RIVER at Big Timber	APR-JUL	260	315	350	99	385	440	353
	APR-SEP	290	345	380	99	415	470	384
WEST ROSEBUD CREEK near Roscoe	APR-JUL	48	57	62	97	68	76	64
	APR-SEP	65	74	80	96	86	95	83
STILLWATER RIVER nr Absarokee (2)	APR-JUL	365	455	515	98	575	665	524
	APR-SEP	465	555	615	98	675	765	625
CLARKS FORK RIVER near Belfry	APR-JUL	415	480	525	97	570	635	540
	APR-SEP	470	535	580	96	625	690	603
RED LODGE CREEK near Boyd (2)	APR-JUL	24	41	52	106	63	80	49
	APR-SEP	35	52	63	105	74	91	60
YELLOWSTONE RIVER at Billings (2)	APR-JUL	2990	3400	3660	98	3930	4300	3740
	APR-SEP	3530	4010	4310	98	4630	5070	4410

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

RESERVOIR STORAGE (1000AF)

RESERVOIR	USABLE CAPACITY	** USABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
MYSTIC LAKE	21.0	2.2	2.2	6.5
COONEY	27.4	21.3	19.9	14.5

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
YELLOWSTONE ab LIVINGSTON	25	108	94
SHIELDS	10	90	79
BOULDER-STILLWATER	6	124	103
CLARK'S FORK-ROCK CREEK	19	110	95
YELLOWSTONE above BIGHORN	53	106	91

LOWER YELLOWSTONE RIVER BASIN

The snowpack in the Bighorn Mountains varies from about average in the Powder River Headwaters to about 120 percent of average in the Little Bighorn Drainage. The upper reaches of the Bighorn River have a little below average snowpack. During February, preciptation in the Bighorn Mountains was about 65 percent of average. Soils under the snowpack have about average amount of moisture. Spring and summer streamflows are predicted to be above average on streams flowing from the north end of the Bighorn Mountains, below average on the Bighorn River and near average on other drainages. The Surface Water Supply Index (SWSI) is +1.9 for the Little Bighorn River and +2.0 for the Tongue River Basin.

STREAMFLOW FORECASTS

FORECAST POINT	FCST PERIOD	90% (KAF)	70% (KAF)	50% (KAF)	50% %AVG	30% (KAF)	10% (KAF)	25YR (KAF)
		<---DRIER---	FUTURE			--WETTER--->		
		-----	CHANCE OF EXCEEDING *			-----		
YELLOWSTONE RIVER at Billings (2)	APR-JUL	2990	3400	3660	98	3930	4300	3740
	APR-SEP	3530	4010	4310	98	4630	5070	4410
BIG HORN RIVER nr St. Xavier (2)	APR-JUL	935	1280	1520	88	1750	2080	1730
	APR-SEP	1040	1420	1680	88	1940	2300	1920
LITTLE BIGHORN at Hardin	APR-JUL	80	135	170	115	205	250	148
	APR-SEP	90	152	193	116	230	280	167
TONGUE RIVER near Decker (2)	APR-JUL	123	225	295	122	350	435	242
	APR-SEP	134	245	315	120	380	470	262
YELLOWSTONE RIVER at Miles City (	APR-JUL	4000	4910	5470	97	6030	6940	5640
	APR-SEP	4620	5660	6340	97	6970	8010	6510
POWDER RIVER near Locate	APR-JUL	97	205	275	99	340	435	278
	APR-SEP	106	220	300	99	370	475	302
YELLOWSTONE RIVER near Sidney (2)	APR-JUL	4190	5260	6010	96	6700	7760	6260
	APR-SEP	4820	6050	6950	97	7700	8930	7200

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

RESERVOIR STORAGE (1000AF)

RESERVOIR	USABLE CAPACITY	** USABLE STORAGE ** THIS YEAR	LAST YEAR	AVE.
BIGHORN LAKE	1356.0	741.6	660.9	660.0
TONGUE RIVER	68.0	36.0	37.0	30.7

WATERSHED SNOWPACK ANALYSIS

WATERSHED	NO. COURSES AVE.D	THIS YEAR AS % OF LAST YR.	AVERAGE
BIG HORN (Wyoming)	59	114	91
LITTLE BIGHORN	5	169	121
TONGUE RIVER (Wyoming)	15	177	113
POWDER RIVER (Wyoming)	14	158	97
YELLOWSTONE RIVER	122	116	93